

WHAT IS CLAIMED IS:

1. A method comprising the steps of:

(a) forming a preblend comprising:

(i) a diluent polyester,

(ii) a polyamide material, and

(iii) an oxygen scavenging material;

(b) providing a base polyester;

(c) introducing the preblend of step (a)

and the base polyester of step (b) into a molding apparatus to permit melting and admixing of the preblend and the base polyester;

(d) injection molding or extruding the admixture of step (c) in the apparatus to provide a preform; and

(e) expanding the preform of step (d) to provide a plastic container having a barrier layer.

2. The method of claim 1 wherein the plastic container is a multilayer plastic container.

3. The method of claim 1 wherein the plastic container is a monolayer plastic container.

4. The method of claim 1 wherein barrier properties of the container are activated after the container is filled with an aqueous fluid.

5. The method of claim 1 wherein the preblend of step (a) has a greater stability after storage for six months at 25°C and 40% relative humidity than a blend containing only a polyamide material and an oxygen scavenging material storage under identical storage conditions.

6. The method of claim 1 wherein the preblend is in a form of solid particles.

7. The method of claim 1 wherein the diluent polyester is present in the preblend in an amount of about 25% to about 75%, by weight of the preblend.

8. The method of claim 1 wherein the diluent polyester comprises a homopolymer or a copolymer of a polyethylene terephthalate, a polyethylene naphthalate, a polybutylene terephthalate, a cyclohexane dimethanol/polyethylene terephthalate copolymer, or a mixture thereof.

9. The method of claim 8 wherein the polyethylene terephthalate comprises a virgin bottle grade polyethylene terephthalate, a post consumer grade polyethylene terephthalate, or a mixture thereof.

10. The method of claim 1 wherein the polyamide material is present in the preblend in an amount of about 25% to about 75%, by weight of the preblend.

11. The method of claim 1 wherein the polyamide material comprises a polymer containing m-xylylenediamine monomer units, p-xylylenediamine monomer units, or a mixture thereof.

12. The method of claim 1 wherein the polyamide material comprises a polymerization product of m-xylylenediamine and adipic acid.

13. The method of claim 1 wherein the oxygen scavenging material is present in the pre-blend in an amount of about 20 to about 2000 parts per million, by weight.

14. The method of claim 1 wherein the oxygen scavenging material comprises a transition metal, or a complex or a salt thereof, selected from the first, second, or third transition metal series of the periodic table.

15. The method of claim 1 wherein the oxygen scavenging material is selected from the group consisting of cobalt, iron, nickel, copper, manganese, and mixtures thereof, or a salt or complex thereof.

16. The method of claim 1 wherein the preblend comprises about 30% to about 70%, by weight, of a diluent polyester comprising a polyethylene terephthalate, a polyethylene naphthalate, or a mixture thereof; about 30% to about 70%, by weight, of an aromatic polyamide material; and about 50 to about 1500 ppm, by weight, of an oxygen scavenging material comprising a salt or a complex of cobalt.

17. The method of claim 1 wherein the base polyester is in a form of solid particles.

18. The method of claim 1 wherein the preblend and the base polyester are admixed in an amount of about 0.5% to about 20%, by weight, of the preblend, and about 80% to about 99.5%, by weight, of the base polyester.

19. The method of claim 1 wherein the base polyester is selected from the group consisting of a polyethylene terephthalate, a polynaphthalene terephthalate, a polybutylene terephthalate, a cyclohexane dimethanol/polyethylene terephthalate copolymer, or a mixture thereof.

20. The method of claim 19 wherein the polyethylene terephthalate comprises a virgin bottle grade polyethylene terephthalate, a post consumer grade polyethylene terephthalate, or a mixture thereof.

21. The method of claim 1 wherein the preform contains about 10 to about 80 ppm, by weight, of the oxygen scavenging material.

22. A plastic container prepared by the method of claim 1.

23. The container of claim 22 having an oxygen permeability of 0.035 cc O₂/package/day or less after filling with water for 48 hours.

24. The container of claim 22 having an oxygen permeability in cc O₂/package/day, after filling with water for 48 hours, that is less than the oxygen permeability of the container prior to filling with water.